SIERPINSKI, WACLAW

*Sierpiński, Wacław. Teoria liczb. [Theory of numbers.] 3rd ed. Monografie Matematyczne, Tom XIX. Warszawa, Wrocław, 1950. vi+544 pp.

This is a new edition of a book first published in 1914, but with some modifications and additions. It is an exposition of the elementary theory of numbers together with the most elementary parts (as Tchebyscheff's theorem on density of prime numbers, Gauss's theory of binary quadratic forms, elementary theory of quadratic number fields) of its more advanced fields (analytic theory of numbers, diophantine equations, quadratic forms, algebraic numbers), serving as introduction to a further study of these fields. The purpose of the author is to give, at the same time, a text-book in number theory for beginning students and an elementary treatise initiating secondary school teachers (and even non-mathematicians interested in mathematics) into this theory. Thus, though elementary, this book is written, within the limits of its subject, with a rather encyclopedic scope. In addition to the proved results, many more special or more difficult ones are quoted without proof. The book contains also many problems and exercises.

Table of contents: (1) Divisibility of numbers and decomposition into prime factors; (2) Indeterminate equations of first degree; (3) Fundamental properties of congruences, congruences of first degree with prime modulus; (4) Theorems of Wilson, Euler and Fermat; theorems on decomposition into a sum of squares; (5) Number and sum of factors, perfect numbers, summation formulas; (6) Möbius' function, Gauss' function, the relation $F(n)=\sum_{d|n}f(d)$ and its inversion; (7) Density of distribution of prime numbers in the sequence of natural numbers; (8) Euler's theorem, Lagrange's theorem, primitive residues and indices; (9) Systematic developments with an arbitrary base of numeration; (10) Pythagoras' equation and its generalizations; (11) Pell's equation; (12) Continued fractions; (13) Theory of congruences of first and second degree; (14) Theory of Legendre's symbol and of Jacobi's symbol; (15) Sketch of the theory of quadratic forms; (16) Theory of complex integers; (17) Introduction to the theory of numerical fields; (18) Introduction to the theory of ideals; (19) Fermat's great theorem for exponents 5 and 7; (20) Complements to various chapters.

M. Krasner.

Source: Mathematical Reviews, Vol 13 No. 9

SIERPINSKI, W.

Theorems

2

Theory of Sets, Theory of Functions of Real Variables

Sierpiński, Waclaw. Solution de l'équation $\omega^t = \xi^\omega$ pour les nombres ordinaux. Acta Sci. Math. Szeged 12, [illegible] Frederico Riesz LXX annos natis [illegible] (1950).

The author solves a special case of the problem of finding [illegible] and t which satisfy the equation [illegible] problem. However, has already been [illegible] by E. Jacobsthal [Math. Ann. 64, 475–[illegible]]. *F. Bagemihl*

Good

Source: Mathematical Reviews, Vol 11 No. 9

SIERPINSKI, W.

SIERPINSKI, W.

3

Sierpiński, W. Contribution à l'étude des restes cubiques. Ann. Soc. Polon. Math. 22 (1949), 269–272 (1950).

Theorem. Let q be a prime number and $m>1$, a natural number. In order that there exist for every integer x an integer y such that $x \equiv y^q \pmod{m}$, it is necessary and sufficient that m be a product of distinct primes none of which is of the form $qk+1$. Sketch of proof. From elementary group-theoretic considerations it is easy to see that every integer prime to m is a qth-power residue if and only if m is not divisible by either q^2 or any prime of the form $qk+1$ [cf. Meyer, Arch. Math. Phys. 43, 413–436 (1865)]. For m not divisible by q^2 or by any prime of the form $qk+1$, the residue classes not prime to m give trouble only if m is nonsquarefree. *P. T. Bateman* (Urbana, Ill.).

Source: Mathematical Reviews, Vol. 11 No. 9

Sierpinski, W.

Sierpiński, W. Sur les puissances du nombre 2. Ann. Soc. Polon. Math. 23, 246–251 (1950).

Two theorems are proved concerning terminal and initial digits of 2^n when written to the base 10^k. The first theorem proves that the sequence 1, 2, 4, 8, ··· when taken modulo 10^k ultimately becomes periodic of proper period $4 \cdot 5^{k-1}$, the

Source: Mathematical Reviews, Vol 12 No. 9.

Sierpiński, W.

Let $u_1, u_2, \cdots$ be an infinite sequence of integers. The author writes $\{u_n\} \varepsilon F_m$ if $\{u_n\}$ is periodic (mod m) (by periodic the author means periodic from a certain point on), $\{u_n\} \varepsilon F$ if $\{u_n\}$ is periodic mod m for every m. The author proves among others the following theorems: (1) If $\{u_n\} \varepsilon F_m$, $\{v_n\} \varepsilon F_m$, then $\{u_n+v_n\} \varepsilon F_m$, $\{u_n \cdot v_n\} \varepsilon F_m$. (2) $\{a^n\} \varepsilon F$ for every a, $n^n \varepsilon F$, $\{n^{n^n}\} \varepsilon F$, etc. (3) If $\{u_n\} \varepsilon F_m$, $v_n \geqq 0$, $\lim v_n = \infty$, $\{v_n\} \varepsilon F$, then $\{u_{v_n}\} \varepsilon F_m$. (4) If $\{u_n\} \varepsilon F_m$, $\{\sum_{i=1}^{n} u_i\} \varepsilon F_m$. These results imply the periodicity of all the usually occurring sequences in number theory. The author remarks that $v_n \geqq 0$, $\{v_n\} \varepsilon F$ does not imply $\{2^{v_n}\} \varepsilon F$; e.g., $v_n = n! - [(n-1)!]$ (compare with (3)). *P. Erdős* (Aberdeen).

Source: Mathematical Reviews, Vol 12 No. 9.

Sierpinski, Waclaw

Sierpiński, Wacław. Le dernier théorème de Fermat pour les nombres ordinaux. Fund. Math. 37, 201–205 (1950).

The author proves various theorems on ordinal numbers. He proves among others that there are arbitrarily large transfinite ordinals α, β, γ, $\alpha<\beta<\gamma$ so that for all $n=1, 2, \cdots$, $\alpha^n+\beta^n=\gamma^n$. He also remarks that $\omega+10$ is the smallest even transfinite ordinal which is not the sum of two prime ordinals, and that ω^3 is the smallest ordinal not the sum of a finite number of primes. *P. Erdős* (Aberdeen).

Source: Mathematical Reviews, Vol 12 No. 9

SIERPINSKI, WACLAW

Sierpiński, Waclaw. Sur un type ordinal dénombrable qui a une infinité indénombrable de diviseurs gauches. Fund. Math. 37, 206–208 (1950).

The author proves in a simple and ingenious way that there exists a countable order type which has $2^{\aleph_0}$ distinct left divisors. The question of the existence of these order types was raised by Mostowski. *P. Erdős* (Aberdeen).

Source: Mathematical Reviews, Vol 12 No. 9. (SRW)

SIERPIŃSKI, WACŁAW

Sierpiński, Wacław. L'équivalence par décomposition finie et la mesure extérieure des ensembles. Fund. Math. 37, 209-212 (1950).

Given a real number $\mu>0$ and a bounded subset E of Euclidean m-space R_m ($m\geqq 1$) with m-dimensional outer measure $m^*(E)>0$, when can one assert that E is equivalent by finite decomposition to some set $H\subset R_m$ with $m^*(H)=\mu$? Assuming $2^{\aleph_0}=\aleph_1$, the author shows that E can always be decomposed into two sets each of which has outer measure equal to $m^*(E)$, and from this lemma he deduces that the assertion in question is true whenever $\mu\geqq m^*(E)$, and also when $0<\mu<m^*(E)$ and $m\geqq 3$. On the other hand, in case $m=1$ or 2 and $0<\mu<m^*(E)$, the assertion is false whenever E is measurable. As the author remarks, the above lemma (and its consequences) can be proved without assuming $2^{\aleph_0}=\aleph_1$ by following an idea of Lusin [C. R. Acad. Sci. Paris 198, 1671–1674 (1934), p. 1673]; but the proof is then much more difficult. *J. C. Oxtoby* (Bryn Mawr, Pa.).

Source: Mathematical Reviews, Vol. 12 No. 4.

SIERPINSKI, WACLAW

Sierpiński, Wacław. Sur les types d'ordre des ensembles linéaires. Fund. Math. 37, 253–264 (1950).

Proofs are given of the results stated in the preceding review, and of several related theorems. *F. Bagemihl.*

SRW

Source: Mathematical Reviews, Vol 13 No. 1

Sierpinski, W.

Sierpiński, W. L'opération du crible et les fonctions [illegible] d'une suite infinie d'ensembles. Soc. Sc. Lett. Varsovie. C. R. Cl. III. Sci. Math. Phys. 41 (1948), 47–62 (1950). (French. Polish summary)

Une fonction univoque $f(E_1, E_2, \cdots)$ d'une suite infinie quelconque d'ensembles linéaires et dont la valeur est toujours un ensemble linéaire, est dite [Kantorovitch et Livenson, Fund. Math. 18, 214–279 (1932), pp. 224–225] "fonction analytique" si les hypothèses $a \varepsilon f(E_1, E_2, \cdots)$ et b non-$\varepsilon f(H_1, H_2, \cdots)$, a et b étant deux nombres réels, entraînent toujours l'existence d'un entier $k>0$ tel que ou bien $a \varepsilon E_k$ et b non-εH_k, ou bien a non-εE_k et $b \varepsilon H_k$. Une fonction analytique f étant donnée, on appelle F_f la famille de tous les ensembles $f(E_1, E_2, \cdots)$ où les E_n $(n=1, 2, \cdots)$ sont des ensembles linéaires fermés. Q étant un ensemble plan et π étant une propriété qu'un ensemble linéaire peut avoir ou ne pas avoir, on appelle $\Gamma_\pi(Q)$ l'ensemble de tous les nombres réels a tels que l'intersection de la droite $x=a$ avec Q ait la propriété π. Une propriété π d'ensemble linéaire étant donnée, on appelle Φ_π la famille de tous les ensembles $\Gamma_\pi(Q)$ où Q [illegible] plan fermé quelconque.

L'auteur démontre les théorèmes suivants. Théorème 1: Pour toute fonction analytique f, il existe une propriété π d'ensemble linéaire telle que $\Phi_\pi = F_f$. Théorème 2: Pour toute propriété π d'ensemble linéaire, il existe une fonction analytique f telle que $\Phi_\pi = F_f$. Théorème 3: La famille de toutes les fonctions analytiques est la plus petite famille $\mathfrak{F}$ de fonctions univoques d'une suite infinie d'ensembles linéaires ayant pour valeur un ensemble linéaire et jouissant des trois propriétés suivantes: (1) Toute fonction $f_k(E_1, E_2, \cdots) = E_k$ $(k=1, 2, \cdots)$ appartient à $\mathfrak{F}$. (2) Si $f \varepsilon \mathfrak{F}$, alors $X - f \varepsilon \mathfrak{F}$ (X étant l'ensemble de tous les nombres réels). (3) La réunion d'un ensemble quelconque de fonctions appartenant à $\mathfrak{F}$ appartient à $\mathfrak{F}$. L'auteur compare les fonctions analytiques avec leur cas particulier: les "fonctions analytiques positives" [Kantorovitch et Livenson, loc. cit.]; ces dernières coïncident [ibid.] avec les fonctions ds de F. Hausdorff. Le théorème 2 cesse d'être vrai si, dans son énoncé, on remplace les mots "fonction analytique" par les mots "fonction analytique positive".

A. Appert.

Source: Mathematical Reviews

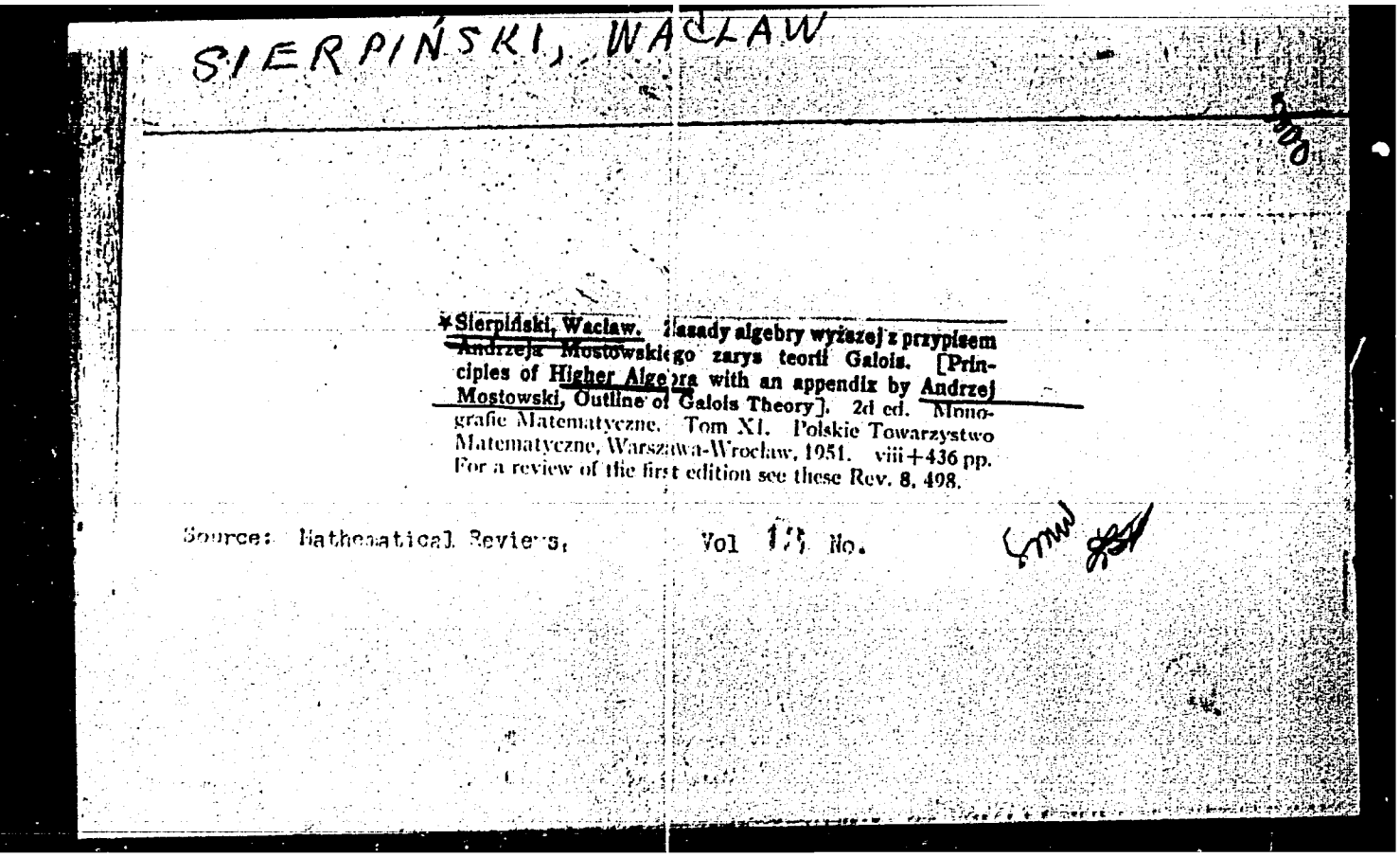
SIERPIŃSKI, WACŁAW

*Sierpiński, Wacław. Algèbre des ensembles. Monografie Matematyczne. Tom XXIII. Polskie Towarzystwo Matematyczne, Warszawa-Wrocław, 1951. ii +205 pp.

Ce rapport donne les titres originaux des chapitres, signale les paragraphes non nécessairement impliqués par ces titres ainsi que les résultats, notions ou notations caractéristiques et contient quelques remarques. Chapitre I (§1–6), Algèbre des propositions. Les notations pour les quantificateurs sont $\prod_x P(x)$ e. $\sum_x P(x)$. Les problèmes logiques sont mentionnés avec citation des travaux spécialisés. Chapitre II (§7–13), Ensembles, éléments, sous-ensembles. Les questions de la calculabilité d'un nombre, de la "définition" ou "construction" d'un ensemble sont signalées. Chapitre III (§14–22), Opérations élémentaires sur les ensembles. La réunion de deux ensembles, appelée aussi somme, est représentée par $A+B$. L'intersection, appelée aussi produit, par AB, la différence par $A-B$. §19. Parallélisme entre l'algèbre des propositions et l'algèbre des ensembles. Algèbre de Boole. §20. Opération de Sheffer $A|B$=différence symétrique de A et B. Il est montré que les sous-ensembles d'un ensemble E constituent un groupe abélien vis-à-vis de cette opération. La notion d'anneau booléen n'est pas indiquée. Chapitre IV (§23–30), Fonctions, images d'ensembles, relations. §25. Théorèmes de Banach et de Cantor-Bernstein. §29. La topologie comme chapitre de la théorie générale des ensembles. Chapitre V (§31–39). §35. Théorèmes sur la séparabilité des ensembles. §34. Les opérations de Hausdorff. Ce dernier chapitre contient des notions et propositions qui ne se trouvent pas dans les ouvrages classiques traitant de la théorie des ensembles et qui peuvent être intéressants en théorie de la mesure ou en topologie. Voici deux spécimens: Si Φ est un anneau d'ensembles (suivant Hausdorff) et si $E\in\Phi_\sigma, H\Phi_\sigma$ et HCE, il existe un ensemble P appartenant à la famille Φ_σ tel que $HCPCE$. Si Φ est un corps d'ensembles (suivant Hausdorff), toute paire M, N d'ensembles disjoints de la famille Φ_σ est séparable $\Phi_\sigma\Phi_\sigma$, c'est-à-dire qu'il existe dans Φ_σ deux ensembles disjoints P et R incluant M et N respectivement. L'ouvrage est d'une lecture aisée et agrémenté d'exercices.

C. Pauc (le Cap).

Source: Mathematical Reviews, Vol 13 No. 6



SIERPIŃSKI, WACŁAW

*Sierpiński, Wacław. Zasady algebry wyższej z przypisem Andrzeja Mostowskiego zarys teorii Galois. [Principles of Higher Algebra with an appendix by Andrzej Mostowski, Outline of Galois Theory]. 2d ed. Monografie Matematyczne. Tom XI. Polskie Towarzystwo Matematyczne, Warszawa-Wrocław, 1951. viii+436 pp. For a review of the first edition see these Rev. 8, 498.

Source: Mathematical Reviews, Vol 13 No.

SIERPINSKI, W.

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Sierpiński, W. Sur un problème de M. J. Novák. Czechoslovak Math. J. 1(76), 97–101 (1951) = Cehoslovack. Mat. Ž. 1(76), 117–122 (1951).

All sets concerned are to be sets of natural numbers. Of two sets A and B the relation $B \supset^* A$ is to mean that $A-B$ is finite and $B>^*A$ to mean that $A-B$ is finite and $B-A$ infinite. Consider the following two problems, N and L, problem N having been proposed by J. Novák recently and problem L by N. Lusin in 1947. Problem N: Can a transfinite sequence of infinite sets N_ξ be found for $\xi<\Omega$ such that $N_\xi \supset^* N_\eta$ for all $\xi<\eta<\Omega$ and yet for no infinite set A does $N_\xi \supset^* A$ for all $\xi<\Omega$? Problem L: Can a transfinite sequence of infinite sets N_ξ be found for $\xi<\Omega$ such that $N_\xi >^* N_\eta$ for all $\xi<\eta<\Omega$ and yet for no infinite set A does $N_\xi >^* A$ for all $\xi<\Omega$? The author proves these two problems equivalent. He has previously shown [Fund. Math. **35**, 141–150 (1948); these Rev. **10**, 689] that problem L can be answered affirmatively under the continuum hypothesis. Thus problem N can also; this is reproved by direct construction. *W. Gustin* (Bloomington, Ind.).

Source: Mathematical Reviews, Vol 13 No. 6

SIERPIŃSKI, WACŁAW

233

Sierpiński, Waclaw. Sur les fonctions continues d'une variable ordinale. Fund. Math. 38, 204–208 (1951).

Let φ be an ordinal number without an immediate predecessor. The author defines that the sequence of ordinals $\{a_\xi\}$, $\xi<\varphi$, has the ordinal λ as its limit, if for every $\nu<\lambda$ there exists a $\mu<\varphi$ so that, for $\mu<\xi<\varphi$, $\nu<a_\xi\leqq\lambda$. A function $f(\xi)$ is said to be continuous if $\lim_{\xi<\varphi} f(\xi)=f(\varphi)$. The author then proves various theorems on continuous functions. Let α be any countable ordinal number, $f(\xi)$ any function defined for the ordinals $\xi<\alpha$. Then $f(\xi)=\lim f_n(\xi)$, $n=1, 2, \cdots$, where the $f_n(\xi)$ are continuous functions. On the other hand the function $f(\xi)=\xi+1$, $\xi<\Omega$ is not the limit of any transfinite sequence of continuous functions. *P. Erdős.*

Source: Mathematical Reviews, Vol 13 No. 9

SIERPIŃSKI, WACŁAW

Sierpiński, Waclaw. Sur quelques propriétés des familles d'ensembles. Soc. Sci. Lett. Varsovie. C. R. Cl. III. Sci. Math. Phys. 42 (1949), 30–35 (1952). (French. Polish summary)

A study is made of conditions under which a family F of sets each of which is the sum of two disjoint sets of F has the property that each set of F is the sum of an infinity of disjoint sets of F—also of the related questions in which the word "disjoint" is replaced, respectively, by "distinct" and by "distinct from itself." For example, it is shown that if F is an arbitrary family of countable sets each of which is the sum of two disjoint sets of F, then each set of F is the sum of an infinity of disjoint sets of F. However, this conclusion does not follow without the assumption of countability on the sets of F, even though F itself is a countable family.

G. T. Whyburn (Charlottesville, Va.).

Source: Mathematical Reviews, Vol 13 No. 9

SIERPINSKI, WACLAW

Sierpiński, Waclaw. Sur les bases dénombrables de la famille de tous des ensembles linéaires dénombrables. C. R. Cl. III. Sci. Math. Phys. Soc. Sci. Lett. Varsovie. 42 (1949), 182–184 (1952). (French. Polish summary)

A l'aide de l'hypothèse du continu Mazur [mêmes C. R. 31, 102–103 (1938); aussi Sierpiński, Fund. Math. 31, 259–261 (1938)] a prouvé l'existence d'une suite S dénombrable d'ensembles linéaires tels que chaque ensemble linéaire dénombrable soit limite d'une suite partielle de S; dans la présente note l'A. montre (sans se servir de l'hypothèse du continu) que les termes de S ne peuvent être ni mesurables L ni pourvus de la propriété de Baire (au sens large).

D. Kurepa (Zagreb).

Source: Mathematical Reviews, Vol 13 No. 10

SIERPIŃSKI, WACLAW: On the Enumerable Bases of the Family of the Enumerable Linear Sets. (French) Sm

SIERPINSKI, WACLAW

Mathematical Reviews
Vol. 14 No. 11
Dec. 1953
Analysis

Sierpiński, Wacław. Sur l'extension d'un théorème de M. D. Pompeiu aux nombres transfinis. Soc. Sci. Lett. Varsovie. C. R. Cl. III. Sci. Math. Phys. 43 (1950), 1–3 (1952).

A natural number n is composite if and only if $n=a+b+c+d$, where a, b, c, d are natural numbers such that $ad=bc$. The author shows that if ν is an ordinal number such that $\nu=\alpha+\beta+\gamma+\delta$, where α, β, γ, δ are positive ordinals satisfying $\alpha\delta=\beta\gamma$, then ν is composite. The converse, however, does not hold (e.g., if $\nu=\omega+2$). In order that a transfinite ordinal ν be composite, it is necessary and sufficient that there exist positive ordinals α, β, γ, δ such that $\nu=\alpha+\beta+\gamma+\delta$ and either $\alpha\delta=\beta\gamma$ or each of the numbers α, β, γ, δ is greater than 1 and less than ν. *F. Bagemihl.*

SIERPINSKI, WACLAW

Math

Mathematical Reviews
Vol. 14 No. 11
Dec. 1953
Analysis

Sierpiński, Waclaw. Sur les produits infinis de nombres [illegible]. C. R. Soc. Sci. Lett. Varsovie. C. R. Cl. III. Sci. Math. Phys. 43 (1950), 20-24 (1952).

The author obtains results concerning rearrangements of infinite products $\prod_{\xi<\alpha} a_\xi$ in the usual sense, where the factors are ordinal numbers, which are analogous to those which he has found [Fund Math. 36, 248-253 (1949); these Rev. 12, 12] for sums. In particular, for a given sequence $\{a_\xi\}_{\xi<\alpha}$, only a finite number of different values can be obtained by rearranging the product, and if the sequence is nondecreasing, then rearrangement of the product produces no change in its value. In the course of the proof it is shown that if α is a transfinite ordinal number, such that $\xi \cdot \beta = \beta$ for $0 < \xi < \alpha$, then, for an ordinal γ, $\gamma \cdot \beta = \beta$ for $0 < \gamma < \alpha$.

F. Bagemihl (Princeton, N. J.).

(2)

Mathematical Reviews
Vol. 14 No. 10
Nov. 1953
Analysis

Sierpiński, Waclaw. Sur quelques conséquences du théorème de M. Kondô concernant l'uniformisation des complémentaires analytiques. Soc. Sci. Lett. Varsovie. C. R. Cl. III. Sci. Math. Phys. 44 (1951), 56–62 (1952).

Using a theorem of Kondô the author proves various theorems on the projective classes of sets. Among others he proves that if $U\ U_1, \cdots$ is an infinite sequence of sets all belonging to the class $C(A)$ or $PC(A)$, there exists an infinite sequence of disjoint sets $V_n \subset U_n$ belonging to the same class so that $\sum_{n=1}^{\infty} V_n = \sum_{n=1} U_n$. P. Erdös.

SIERPINSKI, WACLAW

Mathematical Reviews
Vol. 14 No. 11
Dec.1953
Topology

Sierpiński, Wacław. Sur une homéomorphie de classe 1, 1 entre un segment de droite et un carré. Soc. Sci. Lett. Varsovie. C. R. Cl. III. Sci. Math. Phys. 44 (1951), 62–65 (1952).

Let S denote the segment $-1 \leqq t \leqq 1$, and Q denote the square $0 \leqq x \leqq 1$, $0 \leqq y \leqq 1$. The author [Revista Mat. Hisp.-Amer. (2) 2, 193–197 (1927)] has given a one-to-one correspondence T between S and Q, defined by $x=\phi(t)$, $y=\psi(t)$, where ϕ and ψ are continuous on the left at every point of S. A consequence of a result proved by Kuratowski [Fund. Math. 22, 206–220 (1934), p. 212] is that there exists a correspondence between S and Q which is a homeomorphism of class 1, 1. In the note under review, the author shows that T is such a correspondence.

F. Bagemihl.

SIERPINSKI, W.

3000

(5)

Sierpiński, W. Une généralisation des théorèmes de S. Mazurkiewicz et P. Bagemihl. Fund. Math. 40, 1–2 (1953).

The author proves the following theorem: Associate with each line l of the plane a cardinal number m_l satisfying $2 \leq m_l \leq 2^{\aleph_0}$. Then there exists a set S in the plane so that for each l the cardinal number of the intersection of S with l equals m_l. *P. Erdős* (South Bend, Ind.).

RDW

SIERPINSKI, W.

Sierpiński, W. Sur une propriété des ensembles analytiques [illegible] (solution d'un problème de E. Marczewski). Fund. Math. 40, 171 (1953).

Soit F la famille de tous les ensembles plans dont chacun est l'intersection d'une suite dénombrable dont les termes sont réunion d'un nombre fini de rectangles aux côtes parallèles aux axes des coordonnées. Alors, tout ensemble analytique linéaire borné est la projection orthogonale d'un élément de F [cf. Souslin, C. R. Acad. Sci. Paris 164, 88–91 (1917), Th. IV]. *G. Kurepa* (Zagreb).

Math. Sets

SIERPIŃSKI, WACŁAW.

Trójkąty pitagorejskie. (Wyd. 1.) Warszawa, Państwowe Wydawn. Naukowe, 1954. 94 p. (Monografie popularnonaukowe. Matematyka) (Pythagorean triangles. 1st ed. footnotes, tables)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

[illegible], M.

"A Proposition Equivalent to a Total of Real Numbers of Power M", P. 53, (SOLSTA ARABSKA NAUK, Vol. 2, No. 2, 1954, Warsovie, Poland)

SO: Monthly list of East European Accessions (EEAL), LC, Vol. 4, No. 3, March 1955, Uncl.

SIERPINSKI, W.

Sierpiński, W. Sur un problème concernant un réseau à ~~10 points~~. Ann. Soc. Polon. Math. 24 (1951), no. 2, 173–174 (1954).

The following problem is due to Zarankiewicz. Let $n>3$. Denote by R_n the system of n^2 points situated on n horizontal and vertical lines (i.e., an n by n matrix). Determine the smallest integer $k(n)$ so that any subset of R_n having $k(n)$ elements contains 9 points situated on three horizontal and three vertical lines. It is easy to see that $k(4)=14$, $k(5)=21$. The author proves that $k(6)=27$. *P. Erdős.*

2000

SIERPINSKI, W.

Sierpiński, W. Un théorème concernant les fonctions continues dans les ensembles ordonnés. Ann. Soc. Polon. Math. 24 (1951), no. 2, 175–180 (1954).

Let E be an ordered set, $f(E)$ a function defined on the elements of E whose values lie in the ordered set H. The author proves that if E is denumerable then $f(E)$ is the limit of a sequence of continuous functions. (The continuity is defined in the order topology.) This generalises a previous result of the author [Fund. Math. 38, 204–208 (1951); these Rev. 13, 828]. *P. Erdős* (South Bend, Ind.).

Sierpinski, Waclaw

*Sierpiński, Waclaw. Arytmetyka teoretyczna. [Theoretical arithmetic.] With the cooperation of Jerzy Łoś. Państwowe Wydawnictwo Naukowe, Warszawa, 1955. 258 pp. zł. 30.

I - F/W

This is an excellent introductory text covering elementary number theory and an axiomatic foundation of the number system. The chapters are as follows: I. Theory of non-negative integers (based on the axioms of Peano); II. Theory of integers and rational numbers; III. Properties of integers (divisibility, prime numbers, Euler's φ function etc.); IV. Congruences, their properties and applications; V. Real numbers (Cantor's approach); VI. Complex numbers and quaternions.

In chapter II the Erdös version of Chebyshev's proof of Bertrand's postulate is reproduced in all detail.

An American reader may be somewhat surprised at the selection of topics (usually covered here in different courses) but it seems to correspond to a course in Polish universities. There is a nice supply of problems. *M. Kac.*

Sierpinski, W.

Sierpiński, W. Prime numbers. Wiadom. Mat. (2) 1, 47–64 (1955). (Polish)
Elementary expository paper.

1-F/W

SM

Sierpiński, W.

PHASE I BOOK EXPLOITATION POL/4232

Polskie towarzystwo matematyczne

Prace Matematyczne, II, 1 (Mathematical Transactions, Vol. 2, pt. 1). Warszawa, Państwowe wyd-wo naukowe, 1956. 200 p. 790 copies printed.

Editorial Committee: Władysław Orlicz (Chief Ed.), Stefan Drobot (Deputy Chief Ed.), Adam Bielecki, Stanisław Hartman, Jan Mikusiński, Roman Sikorski, Marceli Stark, Hanna Szmuszkowicz, Krzysztof Tatarkiewicz, and Włodzimierz Wrona.

PURPOSE: This book is intended for mathematicians.

COVERAGE: This collection of articles deals with the theory of numbers, algebra, and some other subjects connected with mathematics. Among topics treated are the pursuit method of the theory of games and a biography of a Polish mathematician K. Zurawski, consisting mainly of a discussion of his mathematical work. No personalities are mentioned. References and summaries in Russian and English are given after several of the articles.

Card 1/4

Mathematical Transactions (Cont.)

TABLE OF CONTENTS:

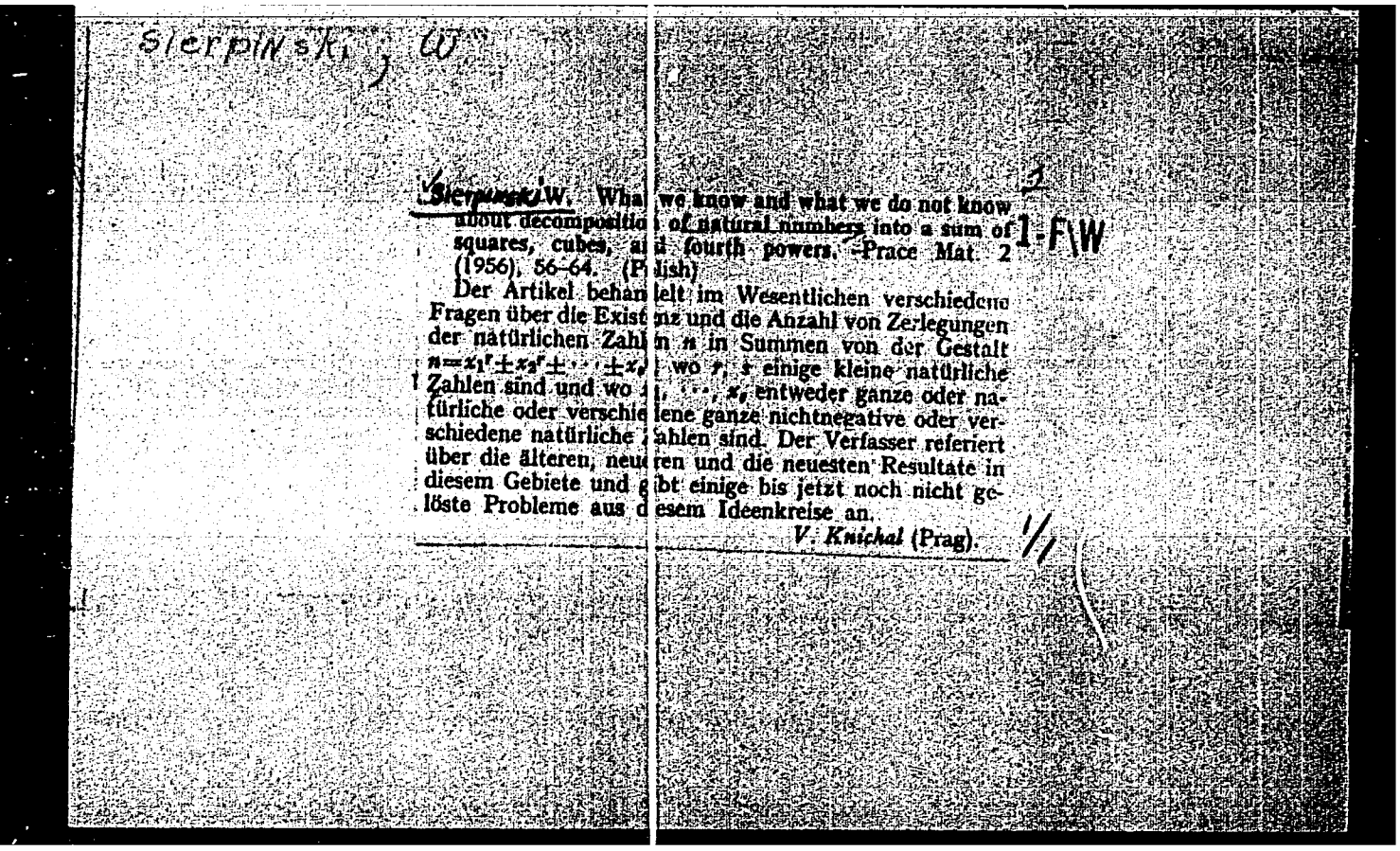
Mathematical Transactions (Cont.) POL/4232

Modules of the Congruence $\sum_{j=1}^{n-1} r^{n-1} \equiv -1 \pmod{n}$ 172

Reports From Scientific Sessions Held at the Polish Mathematical Society 179

AVAILABLE: Library of Congress

Card 4/4 AC/wbc/ec 9-16-60



Sierpinski, W

Sierpiński W. What we know and what we do not know about decomposition of natural numbers into a sum of squares, cubes, and fourth powers. Prace Mat. 2 (1956), 56–64. (Polish)

Der Artikel behandelt im Wesentlichen verschiedene Fragen über die Existenz und die Anzahl von Zerlegungen der natürlichen Zahlen n in Summen von der Gestalt $n=x_1^r \pm x_2^r \pm \cdots \pm x_s^r$, wo r, s einige kleine natürliche Zahlen sind und wo $x_1, \ldots, x_s$ entweder ganze oder natürliche oder verschiedene ganze nichtnegative oder verschiedene natürliche Zahlen sind. Der Verfasser referiert über die älteren, neueren und die neuesten Resultate in diesem Gebiete und gibt einige bis jetzt noch nicht gelöste Probleme aus diesem Ideenkreise an.

V. Knichal (Prag).

2
1-FW

SIERPINSKIY, W.

Sierpiński, W. On certain expansions of real numbers into infinite fastconverging products. Prace Mat. 2 (1956), 131–[illegible]. (Polish. Russian and English summaries)

Theorems 1 and 2 To every real number $x>1$ and every sequence n_k of natural numbers there exists a unique expansion $x=(1+n_1/d_1)(1+n_2/d_2)\cdots$, where the d_k are natural numbers and satisfy

$$d_{k+1}>(d_k-1)(d_k+n_k)n_{k+1}/n_k.$$

Here x is rational if and only if

$$n_k(d_{k+1}-1)=(d_k-1)(d_k+n_k)n_{k+1}$$

for large k. This strengthens results of A. Oppenheim [Quart. J. Math. Oxford Ser. (2) 4 (1953), 303–307; MR 15, 698]. The special case $n_k=1$ (Theorem 3) is due to G.

B. Escott [Amer. Math. Monthly 44 (1937), 644–646], who gives the expansion

$$\sqrt{((k+2)/(k-2))}=(1+2/(k_1-1))(1+2/(k_2-1))\cdots$$

with $k_1=k$ and $k_{n+1}=k_n(k_n^2-3)$. K. Zeller.

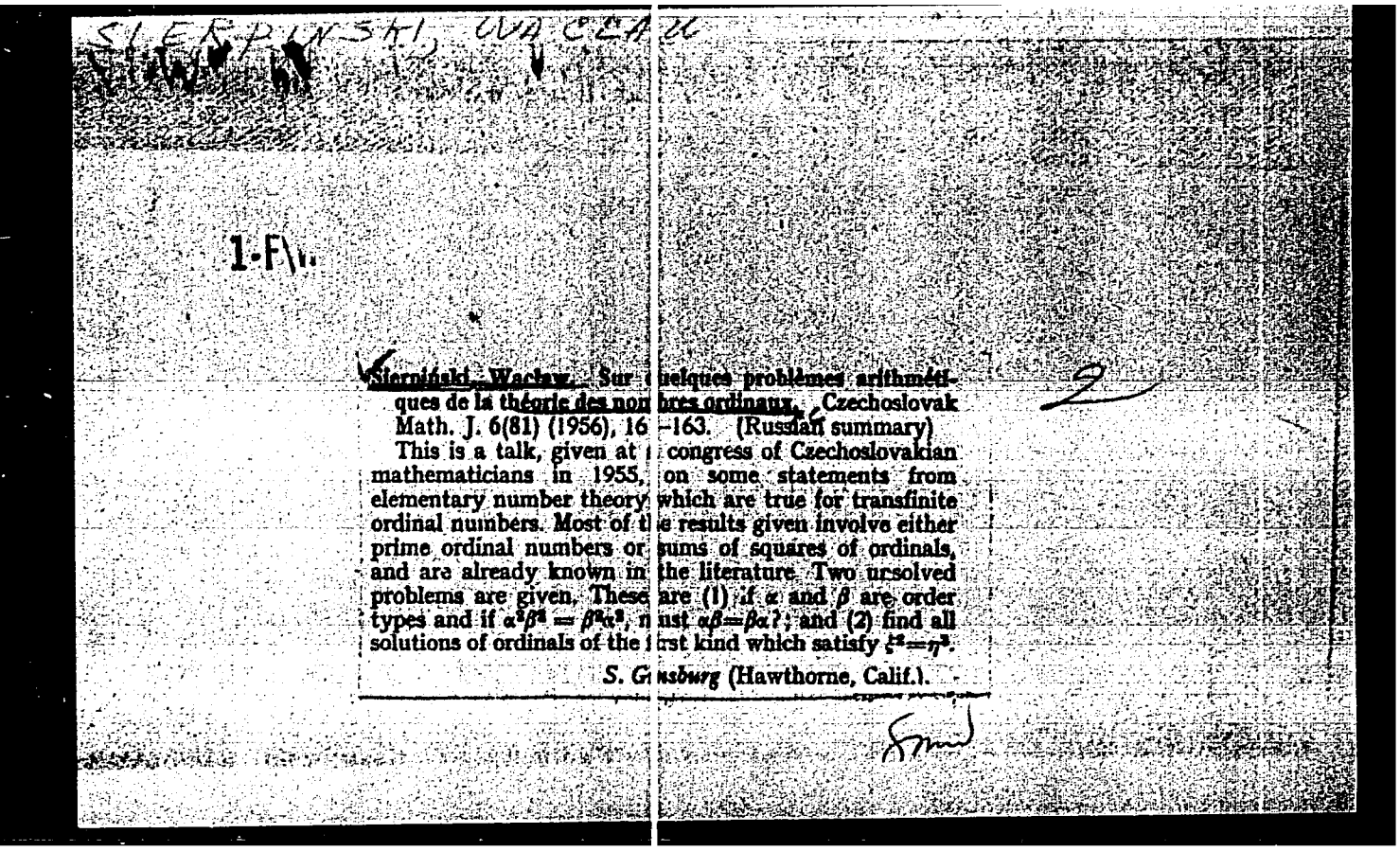
Sierpiński, W.

Sierpiński, W. Sur une propriété de la fonction $\varphi(n)$. Publ. Math. Debrecen 4 (1956), 184–185.

For every integer k, the equation $\varphi(x+k)=\varphi(x)$ has a

$\varphi(x+k)=\varphi(x)$ has more than n [illegible]

H. S. Zuckerman (Seattle, Wash.).



SIERPINSKI, WAC

1-F\...

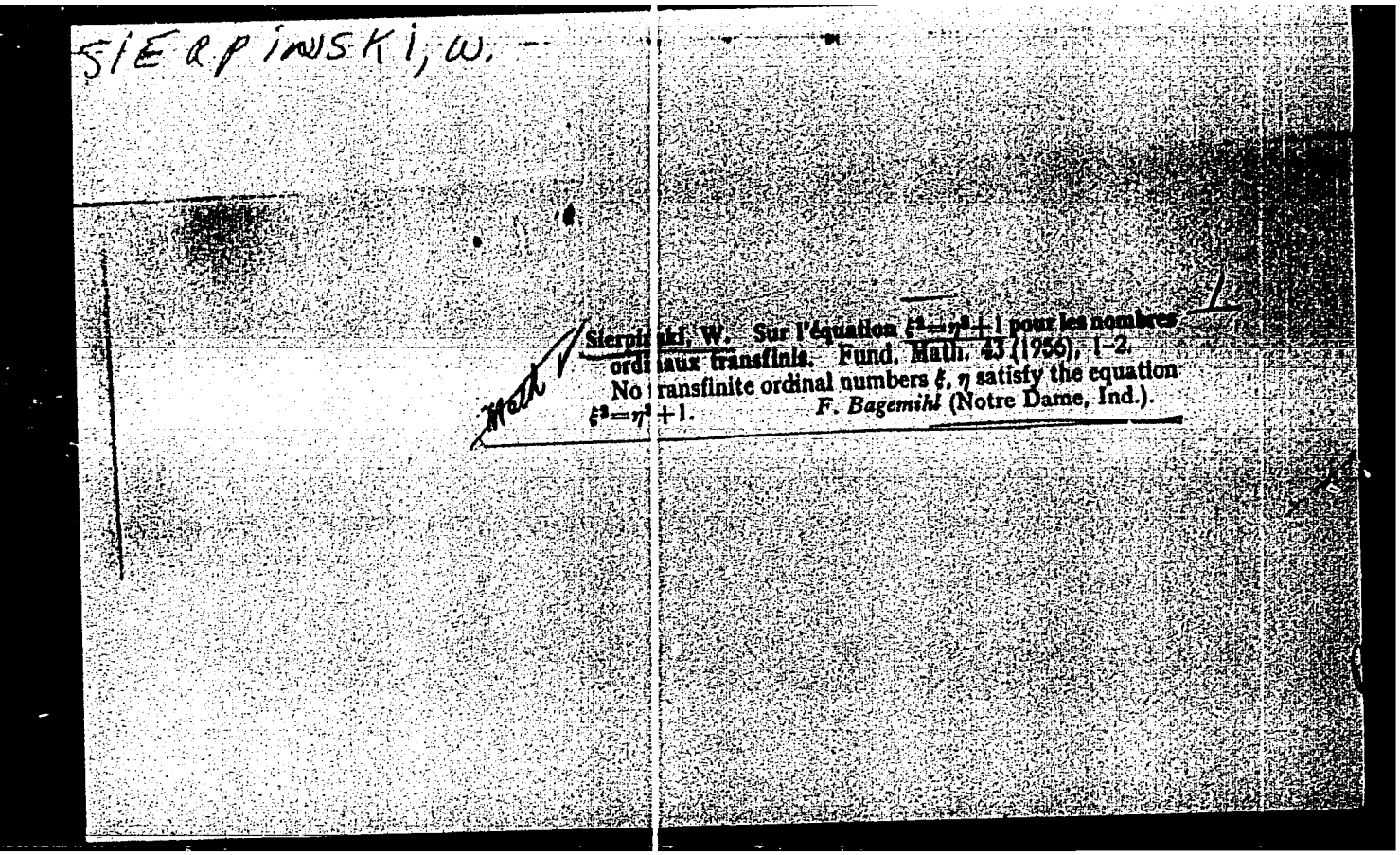
Sierpiński, Wacław. Sur quelques problèmes arithmétiques de la théorie des nombres ordinaux. Czechoslovak Math. J. 6(81) (1956), 162–163. (Russian summary)

This is a talk, given at a congress of Czechoslovakian mathematicians in 1955, on some statements from elementary number theory which are true for transfinite ordinal numbers. Most of the results given involve either prime ordinal numbers or sums of squares of ordinals, and are already known in the literature. Two unsolved problems are given. These are (1) if α and β are order types and if $\alpha^3\beta^3 = \beta^3\alpha^3$, must $\alpha\beta=\beta\alpha$?; and (2) find all solutions of ordinals of the first kind which satisfy $\xi^2=\eta^3$.

S. Ginsburg (Hawthorne, Calif.)

SIERPINSKI, W.

"O rozwiązywaniu równań w liczbach całkowitych" (About solving of equations in integral numbers). by W. Sierpinski. Reported in New Books (Nowe Książki), No. 12, June 15, 1956.



SIERPINSKI, W. —

Sierpiński, W. Sur l'équation $\xi^3=\eta^3+1$ pour les nombres ordinaux transfinis. Fund. Math. 43 (1956), 1–2.

No transfinite ordinal numbers ξ, η satisfy the equation $\xi^3=\eta^3+1$. *F. Bagemihl* (Notre Dame, Ind.).

SIERPINSKI, W.

Sierpiński, W. Sur une propriété des nombres ordinaux. Fund. Math. 43 (1956), 139–140.

The necessary and sufficient condition [cf. Bachmann, Transfinite Zahlen, Springer, Berlin, 1955, p. 100; MR 17, 134] for the validity of the relation $\alpha\beta=\beta\alpha$ for ordinal numbers α, β is derived without the use of the normal form.

F. Bagemihl (Notre Dame, Ind.)

SIERPINSKI, WACLAW.

O rozkladach liczb wymiernych na ulamki proste.

Poland
Warszawa/(Panstwowe Wydawn. Naukowe) 1957. 110 p.
(Monografie popularnonaukowe. Matematyka)

Monthly List of East European Accessions Index (EEAI), LC, Vol. 8, No. 6, June 1959
Uncl.

SIERPINSKI, WACLAW

"What the theory of numbers deals with"

p. 146 (Redaktor Rajmund Mormul, 'Wiedza Powszechna', Warsaw, Poland, 1957)

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 1, Jan. 59.

SIERPINSKI, W.

"What is known and what is unknown about the representation of natural numbers as sums of squares, cubes, and fourth powers? Tr. from the Polish"

Fiziko-Mathematichesko Spisanie. Sofiia, Bulgaria. Vol. 1, no. 1/2, 1958

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclas

SERPINSKI, W.
~~SERPINSKI, W.~~

16(1) PHASE I BOOK EXPLOITATION SOV/2508

Matematicheskoye prosveshcheniye; matematika, yeye prepodavaniye, prilozheniya i istoriya, vyp. 4 (Mathematical Education; Mathematics, Its Teaching, Application and History, Nr. 4) Moscow, Gostekhizdat, 1959. 15,000 copies printed.

Ed.: I.N. Bronshteyn; Editorial Board of Series: I.N. Bronshteyn, A.I. Markushevich, I.M. Yaglom; Tech. Ed.: S.N. Akhlamov.

PURPOSE: This book is intended for persons without an extensive mathematical education who are interested in trends in contemporary mathematics. The book may be useful to high school mathematics teachers.

COVERAGE: The book consists of articles, reviews, and scientific and methodological reports, some of which are translations from other languages. The state of modern mathematics is covered, including applications, history, teaching of mathematics in schools, and mathematical developments in the USSR and abroad. One section deals with scientific and pedagogical life in the

Card 1/8

USSR and another contains reviews of certain mathematical publications. Some mathematical background is necessary to understand the book; certain articles require a knowledge of higher mathematics.

TABLE OF CONTENTS:

I. REVIEWS, ARTICLES, TRANSLATIONS

SERPINSKIY, Vatslav [Sierpinski, Waclaw], prof.; ZETKL', S.I., red.; SIDOROVA, L.A., red.; GOLOVKO, B.N., tekhn.red.

[Pythagorean triangles; textbook for teachers] Pifagorovy treugol'niki; posobie dlia uchitelei. Pod red. S.I.Zetelia. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv. RSFSR, 1959. 110 p. [Translated from the Polish]. (MIRA 12:7)

1. Varshavskiy universitet. Vitse-prezident Pol'skoy Akademii nauk (for Serpinskiy).
(Triangle)

SER[illegible] W. [Sierpiński, W.] (Warszawa); SIERPIŃSKI, W.G. [translator]

[illegible]tics in Poland. Mat. ros. [illegible]-93 '57.

(MIRA 12:11)

(Poland--Mathematics)

SIERPINSKI, W.

On a problem of H. Steinhaus concerning the ensembles of points on the plane. In French. p. 191.

FUNDAMENTA MATHEMATICAE. (Polska Akademia Nauk) Warszawa, Poland. Vol. 46, no. 2, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

SERPINSKIY, Vatslav [Sierpinski, Waclaw]; GOLUBEV, V.A. [translator]; DOLGOPOLOV, V.G., red.; MAKAROVA, N.F., tekhn.red.

[One hundred simple and yet difficult arithmetical problems; on the border between geometry and arithmetic (textbook for teachers)] Sto prostykh, no odnovremenno i trudnykh voprosov arifmetiki; na granitse geometrii i arifmetiki (posobie dlia uchitelei). Predisl. i primechaniia V.A.Golubeva. Moskva. Uchpedgiz, 1961. 74 p. Translated from the Polish. (MIRA 15:5)

1. Vitse-prezident Pol'skoy Akademii nauk (for Serpinskiy). (Arithmetic—Problems, exercises, etc.)

SIERPINSKI, W. (Warszawa)

On a problem of Fermat. Rocz wiad matem 4 no.2:177-181 '61.

(Numbers, Theory of)

SIERPINSKI, W. (Warszawa)

A remark on composite numbers m which divide $a^m - a$. Rocz wiad matem 4 no.2:183-184 '61.

(Numbers, Theory of)

SIERPINSKI, W. (Warszawa)

A remark on Pythagorean triangles. Rocz wiad matem 4 no.2:185 '61.

(Numbers, Theory of) (Triangles)

SIERPINSKI, W. (Warszawa)

Remarks on M. J. W. S. Cassels' work "On a diophantine equation".
Acta arithmetica 6 no.4:469-472 '61.

SIERPINSKI, Waclaw (Warszawa)

Elementary demonstration of a theorem on the sum of three distinct prime numbers. Glas mat fiz Hrv 16 no.1/2:87-88 '61.

SIERPINSKI, Waclaw (Warszawa)

On the families of infinite sets of natural numbers. Fund mat 49 no.2:151-155 '61. (KEAI 10:9)

(Aggregates) (Numbers, Theory of)

SIERPINSKI, W. (Warszawa)

On a problem of the n value logic. Fund mat 49 no.2:167-170 '61.

SIERPINSKI, W.

On a hypothesis with respect to prime numbers. Glas mat fiz Hrv 16 no.3/4:328 '61.

SIERPINSKI, W. (Warszawa)

On natural numbers D for which the expansion period of the number $\sqrt{D}$ on the arithmetic chain fraction has three terms. Rocz wiad matem 5:53-55 '61.

SIERPINSKI, W. (Warszawa)

What has been achieved in the theory of numbers with the help of electronic machines? Rocz wiad matem 5:57-65 '61.

SIERPINSKI, W.

On a A. Makowski's problem concerning tetrahedral numbers.
Publ Inst math SANU 2(16):115-119 '62 [publ. '63].

SIERPINSKI, W. (Warszawa)

Triangular numbers being the sums of two smaller triangular numbers. Rocz wiad matem 7 no.1:27-28 '63.

A certain theorem equivalent to the theorem on arithmetic progression. Rocz wiad matem 7 no.1:29 '63.

Sequences of numbers in couples or prime numbers respectively. Ibid.:31-38

On infinity. Ibid.:39-49 '63.

SIERPIŃSKI, W. (Warszawa)

Composed numbers of the form $a^{2n}+1$. Col math 10 no.1:133-135 '63.

SIERPINSKI, Waclaw, prof. dr.

The Polish School of Mathematics. Problemy 19 no.3:146-155 '63.

1. Czlonek rzeczywisty Polskiej Akademii Nauk, Warszawa.

SIERPINSKI, W. (Warsaw)

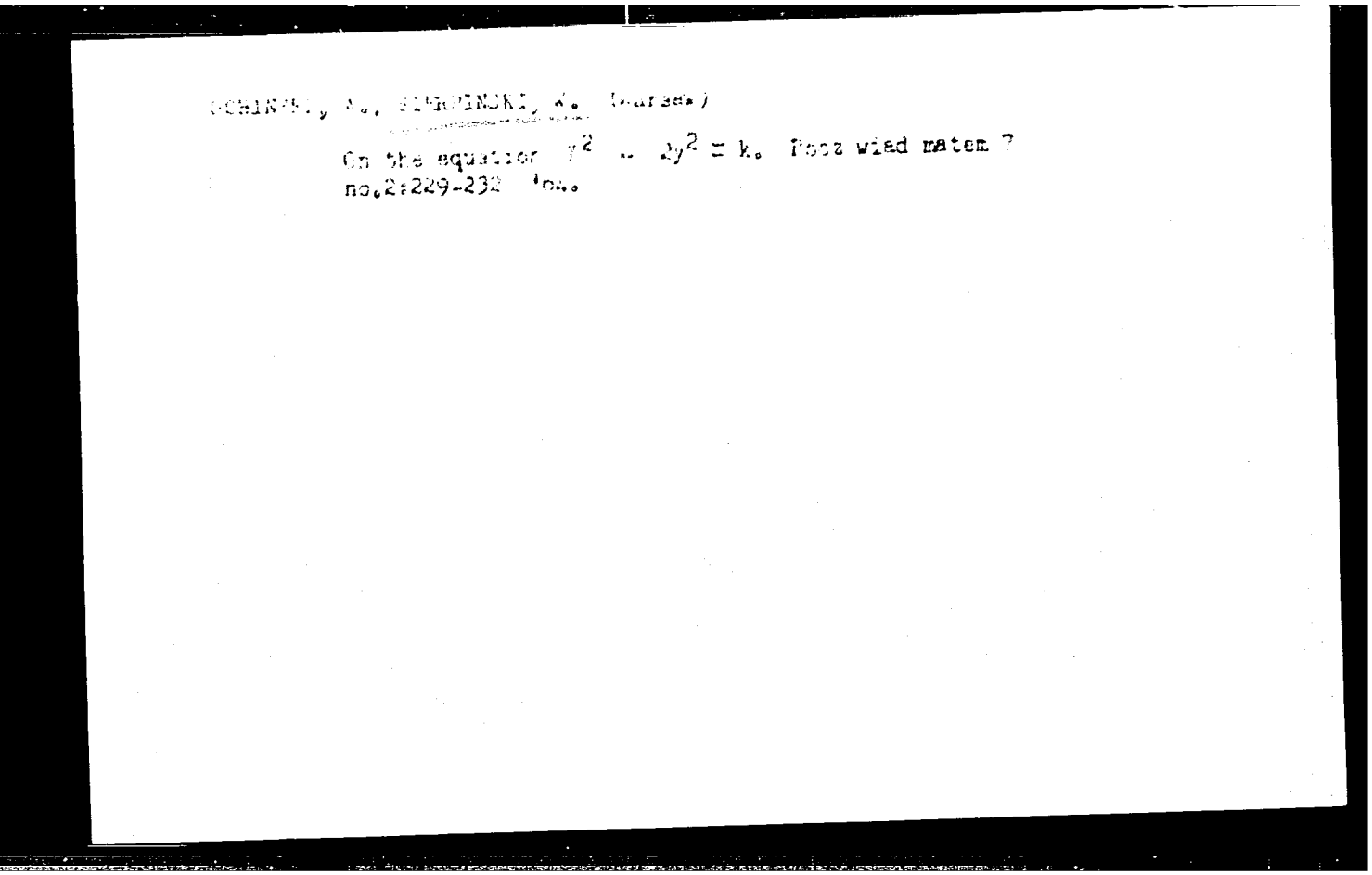
The families of infinite sets of natural numbers. Fund math 56 no.1:115-116 '64.

SIERPINSKI, Waclaw; MEL'NIKOV, I.G. [translator]

[What we know and do not know about the prime numbers. Translated from the Polish] Chto my znaem i chego ne znaem o prostykh chislakh. Leningrad, Gos.izd-vo fiziko-matem. lit-ry, 1963. 90 p. (MIRA 18:3)

STERPINSKI, W. (Warsaw)

Remarks on a certain problem of P. Erdös. Rocz. wiad. matem
7 no.2 221-228 '64.



[illegible], A., SIERPINSKI, A. (Warsaw)

On the equation $y^2 - xy^2 = k$. Prace mat. 7 no.2:229-232 '62.

Sierpinski, Z.

POL.

3310 632.943 : 632.703 : 634.048

Sierpiński Z. Observations on the Prospects of Chemically Combating the Xyloterus lineatus L. Beetle.

„Spostrzeżenia nad możliwością chemicznego zwalczania drzewnika [illegible] Xyloterus lineatus L." Sylwan. No. 1, 1951, pp. 63—67, 1 tab.

The Xyloterus lineatus beetle is, although not actually a menace to standing timber resources, harmful to timber, since, particularly in felled conifers it bores worm holes which impair the technical value of the timber. This harmful insect is occurring in increased numbers and the necessity therefore arises to prepare to combat it. Observations reveal that Xyloterus lineatus is particularly susceptible to contact insecticides, particularly to hexa-chlorates. The brief swarming period facilitates chemical combating of this pest; the effects cannot, however, be ascertained until after comparative investigation of the occurrence of the beetle on timber sprayed and unsprayed.

SIERPINSKI, Z.

POL.

3941 032.943 : 632.768 : 634.948

Sierpiński Z. The State of Studies on the Chemical Combating of the Ips typographus Beetle.

„Stan badań nad chemiczną walką z kornikiem drukarzem w lesie". Sylwan. No. 2, 1954, pp. 85—30.

The prevalent method of fighting the Ips typographus beetle by means of trap trees has the disadvantage of leaving alive in forests some 20 to 30 per cent of the population of this beetle. Insecticides are the most radical method of combating the beetle, but are harmful in so far as they simultaneously destroy other useful species of forest fauna. Failing other means of combating, chemical means are therefore being used in cases of substantial gradation. Efforts are, moreover, being directed towards selecting such chemical media as do not destroy any but the particular species of beetle against which the campaign is being pursued. The author reviews chemical media hitherto in use, the degree of their effectiveness, and the advantages and disadvantages of using them. Brief reference is also made to the combating of the Ips typographicus beetle at round-timber yards.

[illegible], S.; [illegible], Z.

Biology of the [illegible]-toothed bark beetle (Ips [illegible] Sahib.). p.59
[illegible] (Instytut Badawczy Leśnictwa i Instytut Technologii Drewna)
Warszawa Vol. 13, 1958

So. East European Accessions List Vol. 5, No. 9 September 1956

SIERPINSKI, Z.

More attention to the pine moth (Heringia Dodecella L.). p.9.

LAS POLSKI. (Ministerstwo Lesnictwa oraz Stowarzyszenie Naukowo-Techniczne Inyznierow i Technikow Lesnictwa i Drzewnictwa) Warszawa, Poland. Vol. 29 no. 1, Jan. 1955

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

GLIŃSKI, Z.

Possibilities of applying Silvexol for fighting spruce beetles. p. 17.

LAS POLSKI. (Ministerstwo Leśnictwa oraz Stowarzyszenie Naukowo-Techniczne Inżynierów i Techników Leśnictwa i Drzewnictwa) Warszawa, Poland. Vol. 29, no. 5, May 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Unel.

BABKA, Piotr; SIERPOWSKI, Andrzej

Possibilities of real utilization of waste heat in the iron and steel industry. Problemy proj hut maszyn 11 no. 5: 138-143 My '63.

1. Biprostal, Krakow.

SIERZPUTOWSKI, Antoni

From a foreign mother; the Polish Tartars. Problemy 19 no.9: 555-565 '63.

SIERZPUTOWSKI, Jerzy, inz.

Municipality funds for local roads. Drogownictwo 17 no.2: 41-43 F '62.

[illegible]IOZ, Jerzy

The use of thioacetamide in toxicological analyses. Jerzy Siestrzencewicz and Eugeniusz Zwierzchowski (Zakład Chem. Toksykolog. i Sądowy Wydziału Farm. Akad. Med., Łódź). *Farm. Polska* 9, 205–6(1953).—Thioacetamide gives the same results as H_2S in toxicological analyses.
L. J. Piotrowski

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Analytical Chemistry

SIEWASTIANOW, N.B., doc. [Sevast'yanov, N.B.], JABLONSKI, O., inz. [translator]

A scheme for stability standards based on the calculus of probability. Bud okretowe Warszawa 10 no.1:10-14 Ja '65.

1. Head, Department of Theory of Ships of the Kaliningrad Technological Institute of Fish Industry and Farming, Kaliningrad (for Sevast'yanov).

POLAND/Chemical Technology. Chemical Products and Their Application. Cellulose and Its Production. Paper. H-33

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38315.

Author : Kuznicka-Serwowa A, Siewierska S
Inst : Not given.
Title : The Investigation of the Absorption Spectra of Hydro- and Oxy-Cellulose in Infrared-Rays.

Orig Pub: Przem wlokienniczy, 1956, 10, No 12, Bull Inst wlokiennictwa, 23-24.

Abstract: Describes the advantages of a spectral chemical analysis of cellulose by the determination of the degree of decomposition of the cellulose and the formation of oxy- and hydrocellulose.

Card : 1/1

END

KARCZEWSKI, T.; KOZLOWSKI, W.; LEWASZKIEWICZ, W.; SIEWIERSKA, S.; WLODARSKI, G.

Contribution to the problem of determining the crystallinity of viscose fibers on the basis of their density. Przegl wlokien 18 no.10:448-449 O '64.

1. Institute of Artificial and Synthetic Fibers, Warsaw.

SIEWIERSKI, J.

Polish Technical Abst.
No. 1 1954
Mechanics, Electrotechnics,
Power

CA 8/7/54

2599 621.317.443 : 533.082/.083 : 669.15-194.56 : 622.341.1

Kozlowski J., Siewierski J. The Balance for Magnetic Analyses.

„Waga do analiz magnetycznych". (Prace Inst. Min. Hutnictwa No. 1). Katowice, 1953, PWT, 9 pp., 18 figs., 2 tabs.

The authors discuss the principles of magnetic analysis, and give a list of the more important types of magnetic balances for such analyses. A description of the balance designed by the authors, executed at the Institute of Metallurgy. This balance has a horizontal displacement; it consists of an appliance for measuring the lifting force, an electromagnet, a beam with a chuck for holding a sample, a damping device, a device for reading the exact zero position, a furnace for heating the sample, and an appliance for temperature measurement. The paper contains test measurement results and a comparison of the results of investigations conducted, with the help of this balance, over ferreous powders. The usefulness of the balance was established in the quantitative determination of magnetite content in ferreous sands, and in the determination of ferrite content in austenitic steel.

SIEMIŃSKI, J.

"Organizing harvesting and threshing work in collective farms." p. 85. (Nowe Rolnictwo, Vol. 2, no. 7, July 1953. Warszawa.)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, Feb. 1954, Uncl.

J. SIEWIERSKI

"Some Remarks Concerning the Introduction of Premiums by Collective Farms"
Page 4 (NOWE ROLNICTWO. Vol. 2, No. 9, Sept. 1953 Warszawa, Poland)

SO: East European, L.C. Vol.2, No. 12, Dec. 1953

[redacted], J.

Metallurgical Abst.
Vol. 21 May 1954
Laboratory Apparatus,
Instruments, Etc.

Balance for Magnetic Analysis. J. Kozłowski and J. Siewierski (*Prace Inst. Mineral. Hutn.*, 1953, 5, (1), 47–56). [In Polish.] The constructional details and main characteristics of a balance designed for the magnetic analysis of Fe ores and austenitic steels are given. The balance can be used for the control of the ferromagnetic phase content in Fe-ore concentrates and in austenitic steels subjected to cold working or heat-treatment.—S. F. L.

SIFWIERSKI, J.

(3)

Methods of Measuring Magnetic Properties of Ferromagnetic Materials. L. Kozlowski and J. Sierzputowski (Prace Inst. Min'n. Hutn., 1954, 6, (1), 44-69).—[In Polish.] Electrodynamic and induction methods are reviewed, and two types of coercimeters designed and built in the Instytut Metalurgii are described.—S. K. L.

10/18/54

Category : POLAND/Nuclear Physics - Instruments and Installations. Methods of Measurement and Investigation C-2

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 326

Author : Siewierski, Jerzy
Title : Problems of Labor Safety and Hygiene when Working with Radioactive Isotopes

Orig Pub : Hutnik (Polska), 1955, 23, No 4, 172-175

Abstract : No Abstract

Card : 1/1

POLAND/Chemical Technology - Chemical Products and Their Applications, Part 1. - Savety and Sanitation Techniques. H-6

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 47253

Author : Jerzy Sievierski
Inst : -
Title : Problems of Safety Technique and Labor Hygiene at Work With Radioactive Isotopes.

Orig Pub : Hutnik (Polska), 1956, 23, No 4, 172-175

Abstract : The action of radioactive substances on the organism and the protective measures are briefly discussed.

Card 1/1

SIEWIERSKI, J.

3

PRACE INSTYTUTU
Miesiętwa Hutnictwa
Nr 6, 1957

L. Kozłowski i J. Siewierski

MAGNETIC BALANCE FOR MEASURING OF MAGNETIC PROPERTIES OF FERRO AND PARAMAGNETIC MATERIALS IN THE RANGE OF TEMPERATURES UP TO 800°C.

Summary

Principles of magnetic analysis by methods of differential and integral methods for measurement of magnetic susceptibility and saturation intensity of magnetization and makes possible the examination of magnetic susceptibility and saturation intensity of magnetization at the temperature up to 800 °C of a test piece up to 500 mg.

P/039/61/000/003/002/002
A221/A126

AUTHORS: Kieszniewski, Jan, Master, Kuś, Lesław, Siewierski, Jerzy, and Wusatowski, Roman, Masters of Engineering

TITLE: Radio-isotopic investigation of drawing die attrition, depending on lubrication and drawing rate

PERIODICAL: Hutnik, no. 3, 1961, 91 - 106

TEXT: In this report the authors describe their investigations, made to establish optimum conditions at which the attrition of drawing dies can be reduced and also to establish the best combination of base coating material and lubricants applied at wire drawing. To measure the attrition of drawing dies, they used irradiated holes through which the wire was drawn. Samples of drawn wire were subsequently examined for their radioactivity, caused by a number of radioactive particles torn off the die hole and adhering to the wire. Test drawing was carried out at 1.5, 2.0 and 2.5 m/sec rate, using 5.5 mm thick wire rods in 5 mm drawing die, 4.1 mm wire rod in 3.5 mm drawing die and 2.3 mm wire rod in 2 mm drawing die. Chemical composition of wire rods used for these experiments was the

Card 1/3

Radio-isotopic investigation of drawing die attrition...

following:

Type of steel	Alloying constituents %					
	C	Mn	Si	P	S	Ni
Low carbon steel	0.08	0.27	0.06	0.021	0.031	0.02
D45A	0.46	0.52	0.17	0.035	0.023	0.02
D85A	0.86	0.55	0.18	0.022	0.021	0.12

For each variant of experiments, 3 coils of about 600 m of wire each were used. For establishing the degree of radioactivity of the drawn wire, 1.3 m long sample pieces were cut out from it, at the beginning at every 4.5 m, then at every 20 m and finally at every 30 m. From these 1.3 m long samples, shorter pieces were cut out and placed in 43 x 45 mm. aluminum frames to be examined for radioactivity by 2 Geiger-Müller counters simultaneously, from the top and from the bottom. The attrition of the drawhole equals about 0.08 g/ton of the drawn wire and, therefore, for a 5 mm wire it will be 1.2×10^{-5} g/m; assuming that the shortest piece of a sample is 0.2 m, the attrition of the drawhole along this piece will be 2.4×10^{-6} g. Therefore the maximum specific radioactivity of drawhole would be

$$s = \frac{3 \times 10^{-4}}{2.2 \times 10^{-6}\ g} \simeq 120\ \mu C/g;$$ similarly, the radioactivity of the largest draw-

Card 2/3

MALKIEWICZ, T., prof.; SIEWIERSKI, J., mgr. inż.

Application and utilization perspectives of radiating isotopes in the iron metallurgical industry. Przegl techn no.19:5,6 13 My '62.

1. Instytut Metalurgii Żelaza.

SIEWIERSKI, L.

4

(2)

Methods of measurement of magnetic properties of permanent-magnet materials. L. Kozlowski and L. Siewierski (*Prace Inst. Minist. Hutnic.*, 1954 **6**, 44—49).—Methods of measurement and types of instruments used are reviewed with special reference to two coercimeters designed and built in the Polish Metallurgical Institute.
S. K. LACHOWICZ.

10/1954

SIEWIERSKI, L.

SCIENCE

Periodical: KOSMOS. SERIA A: BIOLOGIA. Vol. 8, no. 3, 1957. In French.

SIEWIERSKI, L. The local variation of single-valued functions, algebraic on the half-plane. p. 1.

Monthly List of East European Acessions (EEAI), LC, Vol. 8, No. 3, May 1959
Unclass.

SIEWIERSKI, L.

SCIENCE

Periodical: KOSMOS. SERIA A: BIOLOGIA. Vol. 8, no. 9, 1957. In French.

SIEWIERSKI, L. Extreme functions in the family of single-valued functions, algebraic on the half-plane. p. 1.

Monthly List of East European Acessions (EEAI), LC, Vol. 8, No. 3, May 1959
Unclass.

I

Country : POLAND
Category: Plant Physiology. Respiration and Metabolism.

Abs Jour: RZhBiol., No 14 1958, No 62969

Author : Siewinski, A.; Mejer, S.; Kocor M.
Inst : -
Title : Tomatin Content in Tomato Leaves, and a Simple Method of Obtaining Tomatidine From Them.

Orig Pub: Przem. chem., 1957, 13 No 9, 543-544.

Abstract: No abstract

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KOCOR, M.; NESPIAK, A.; SIEWINSKI, A.

Myrothecium roridum tode metabolites. I.Myrothecin. Bul chim PAN 9 no.4:207-211 '61.

1. Department of General Chemistry and Department of Phytopathology, College of Agriculture, Wroclaw. Presented by T. Urbanski.

(Myrothecium roridum) (Metabolites)

URBANSKI, Stanislaw; SIWKO, Stanislaw

A countercurrent chimney recuperator. Przegl odlew 14 no.2:59-60 F'64.

SIFAJ, S.; NIEPEL, G.

Placement of workers with diminished working ability due to rheumatic conditions. Pracovni lek. 2 no.4:169-174 15 Sept 50. (CLML 20:4)

L 36374-66 EEC(k)-2/EWT(d /EWT(l)/FSS-2 TT/GW/AST
ACC NR: AP6010462 (N) SOURCE CODE: UR/0401/66/000/003/0026/0027

AUTHOR: Siforov, V. (Corresponding member AN SSSR)

ORG: none

TITLE: Luna-9 automatic space station and its radioelectronic systems

SOURCE: Starshina-serzhant, no. 3, 1966, 26-27

TOPIC TAGS: automatic space station, soft landing spacecraft, space electronics/ Luna-9 automatic space station

ABSTRACT: The article deals with the Luna-9 automatic space station and its diverse radio electronic equipment consisting of radio receivers and transmitters, a television set, a temperature-control system, electronic optical equipment for orienting the space station during flight, a radio orbit-control system, a programmed timer, and a radio system for a soft lunar landing. The orbit transfer maneuver was controlled from the Earth. The Luna-9 space station carried out a panoramic survey of the moon and transmitted pictures of its landscape to the Earth with the aid of special television equipment. The braking action of the Luna-9 space station for a soft lunar landing began at an altitude of 75 km from the Moon's surface. A soft-landing control system ensured the reduction of the speed of the Luna-9 station from 2600 m/sec to a few m/sec near the Moon's surface. Orig. art. has: 2 figures. [NT]

SUB CODE: 22/ SUBM DATE: none

Card 1/1

SIFMAN, R.I. (Moscow).

Public questionnaires as a source of studying morbidity in England and the United States. Sov.zdrav. 12 no.6:56-59 N-D '53. (MLRA 6:11)
(United States--Statistics, Medical) (England--Statistics, Medical)